



Potential of an age adjusted D-dimer cut-off value to improve the exclusion of pulmonary embolism in older patients: a retrospective analysis of three large cohorts

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Résumé en anglais	<p>Objectives In older patients, the the D-dimer test for pulmonary embolism has reduced specificity and is therefore less useful. In this study a new, age dependent cut-off value for the test was devised and its usefulness with older patients assessed.Design Retrospective multicentre cohort study. Setting General and teaching hospitals in Belgium, France, the Netherlands, and Switzerland. Patients 5132 consecutive patients with clinically suspected pulmonary embolism. Intervention Development of a new D-dimer cut-off point in patients aged >50 years in a derivation set (data from two multicentre cohort studies), based on receiver operating characteristics (ROC) curves. This cut-off value was then validated with two independent validation datasets. Main outcome measures The proportion of patients in the validation cohorts with a negative D-dimer test, the proportion in whom pulmonary embolism could be excluded, and the false negative rates. Results The new D-dimer cut-off value was defined as (patient's age×10) µg/l in patients aged >50. In 1331 patients in the derivation set with an "unlikely" score from clinical probability assessment, pulmonary embolism could be excluded in 42% with the new cut-off value versus 36% with the old cut-off value (<500 µg/l). In the two validation sets, the increase in the proportion of patients with a D-dimer below the new cut-off value compared with the old value was 5% and 6%. This absolute increase was largest among patients aged >70 years, ranging from 13% to 16% in the three datasets. The failure rates (all ages) were 0.2% (95% CI 0% to 1.0%) in the derivation set and 0.6% (0.3% to 1.3%) and 0.3% (0.1% to 1.1%) in the two validation sets. Conclusions The age adjusted D-dimer cut-off point, combined with clinical probability, greatly increased the proportion of older patients in whom pulmonary embolism could be safely excluded.</p>
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